REMARKS

This is a full and timely response to the outstanding non-final Office Action mailed November 20, 2003. Claims 23-63 are now pending in the present application. More specifically, claims 23, 29, 30, 36, 40, and 46 are amended, and claims 49-63 are newly added.

Claims 23, 30, 36 and 40 were rejected under 35 U.S.C. 102(e) as allegedly being anticipated by *Grove* USPN 5,857,103. Claims 24-29, 31-35, 37-39, and 41-48 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over *Grove* as applied in claim 23 and in view of *Hayashi* USPN 5,828,886. Reconsideration and allowance of the application and presently pending claims are respectfully requested.

A. Newly Cited Art

Grove teaches adding a new hardware operation (and its associated opcode) to an instruction set. Those new opcodes occupy previously unused opcode space. *Grove*'s approach requires a decoder ("LUT" column 9, line 53) to decode the new opcodes. The LUT in *Grove* is a hardware device that the processor uses to recognize opcodes in instructions. Since *Grove*'s approach requires defining new opcodes, the LUT in *Grove* must be modified to recognize the new opcodes. In the case where no new opcodes can be defined (*e.g.*, added to the instruction set), then *Grove*'s approach will not work.

In *Grove*, the LUT (a hardware device) does not pass any information from the compiler. It contains information on how to interpret the opcodes contained in the instructions generated by the compiler (hence the need of a consistent change to both the LUT and the compiler).

Furthermore, in *Grove* the LUT is not passed or communicated to a software application. The LUT is a fixed hardware circuitry in the processor. It is not used by the compiler. A change to the LUT (due to new opcode) is made so that the LUT is consistent with changes to the compiler.

B. Rejected Claims

Independent Claim 23

Independent claim 23 is allowable for at least the reason that none of the cited references teach suggest or disclose "using the one or more unused bits to encode information without defining new instructions or opcodes."

Dependent Claims 24-29

Dependent claims 24-29 are allowable for at least the reason that they depend from claim 23 which has been shown to allowable over the cited art.

Independent Claim 30

Independent claim 30 is allowable for at least the reason that none of the cited references teach suggest or disclose "encode information in the one or more unused bits without defining new instructions or opcodes."

Dependent Claims 31-35

Dependent claims 31-35 are allowable for at least the reason that they depend from claim 30 which has been shown to allowable over the cited art.

Independent Claim 36

Independent claim 36 is allowable for at least the reason that none of the cited references teach suggest or disclose "using the one or more unused bits to pass information to a post-compile-time software application without defining new instructions or opcodes."

Dependent Claims 37-39

Dependent claims 37-39 are allowable for at least the reason that they depend from claim 36 which has been shown to allowable over the cited art.

Independent Claim 40

Independent claim 40 is allowable for at least the reason that none of the cited references teach suggest or disclose "encoding information in the one or more unused bits without defining new instructions or opcodes."

Dependent Claims 41-45

Dependent claims 41-45 are allowable for at least the reason that they depend from claim 40 which has been shown to allowable over the cited art.

Independent Claim 46

Independent claim 46 is allowable for at least the reason that none of the cited references teach suggest or disclose "wherein the one or more unused bits are used to pass information to the post-compile-time software application without defining new instructions or opcodes."

Dependent Claims 47-48

Dependent claims 47-48 are allowable for at least the reason that they depend from claim 46 which has been shown to allowable over the cited art.

C. Newly Added Claims

Newly added claims 49-63 are believed to be adequately supported by the specification and distinguishable from the cited references.

Independent Claim 49

Independent claim 49 is allowable for at least the reason that none of the cited references teach suggest or disclose "a compiler that is stored in the memory and that is configured to compile blocks of code, to find unused bits in an instruction in one of the blocks of code, and to encode information as a bit vector in the unused bits."

Dependent Claims 50-53

Dependent claims 50-53 are allowable for at least the reason that they depend from claim 49 which has been shown to be allowable over the cited art.

Independent Claim 54

Independent claim 54 is allowable for at least the reason that none of the cited references teach suggest or disclose "compiling blocks of code, including

finding unused bits in an instruction in one of the blocks of code, and encoding information as a bit vector in the unused bits."

Dependent Claims 55-58

Dependent claims 55-58 are allowable for at least the reason that they depend from claim 54 which has been shown to be allowable over the cited art.

Independent Claim 59

Independent claim 59 is allowable for at least the reason that none of the cited references teach suggest or disclose "a compiler configured to compile blocks of code, to find unused bits in a NOP instruction in one of the blocks of code, and to encode information as a bit vector in the unused bits, wherein the information identifies whether certain registers in said one of the blocks of code are live."

Dependent Claim 60

Dependent claim 60 is allowable for at least the reason that it depends from claim 59 which has been shown to be allowable over the cited art.

Independent Claim 61

Independent claim 61 is allowable for at least the reason that none of the cited references teach suggest or disclose "compiling blocks of code, including finding unused bits in a NOP instruction in one of the blocks of code, and encoding information as a bit vector in the unused bits, wherein the information identifies whether certain registers in said one of the blocks of code are live."

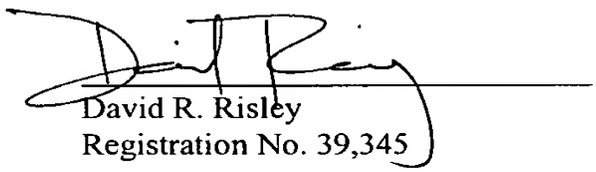
Dependent Claims 62 and 63

Dependent claims 62 and 63 are allowable for at least the reason that they depend from claim 61 which has been shown to be allowable over the cited art.

CONCLUSION

In light of the foregoing and for at least the reasons set forth above, Applicants respectfully submit that all rejections have been rendered moot, and that the now pending claims 23-63 are in condition for allowance. Favorable reconsideration and allowance of the present application and all pending claims are hereby courteously requested. If, in the opinion of the Examiner, a telephonic conference would expedite the examination of this matter, the Examiner is invited to call the undersigned attorney at (770) 933-9500.

Respectfully submitted,



David R. Risley
Registration No. 39,345

Thomas, Kayden, Horstemeyer & Risley, L.L.P.
100 Galleria Parkway, NW, Suite 1750
Atlanta, GA 30339-5948
Telephone: 770-933-9500
Fax: 770-951-0933